San José Transportation Needs and Funding Strategies

Draft Report

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Department of Transportation
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CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

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Introduction

An effective transportation system is vital to the livability and economic health of San José. The transportation system provides access to jobs, homes, schools, shopping and recreation. It is the City's goal to provide safe, efficient, and attractive transportation facilities for all travel modes, allowing for viable choices between driving personal vehicles, walking, biking, and using transit. Also, the condition and appearance of the transportation infrastructure is an important part of the "urban fabric" and contributes to the overall quality of life for City residents. As stated in the General Plan, "well maintained infrastructure makes a city a desirable place to live and work, and contributes to its prosperity."

The quality of the City's transportation system is in a significant state of decline. Current funding investments are not sufficient to adequately maintain, operate, and improve the system in accordance with City goals and community expectations.

The purpose of this report is to quantify the scope of the issue, identify the key factors that contribute to the problem, and explore options to address the challenge. **The intent is to stimulate discussion among City officials towards a comprehensive and coordinated plan of action.**

This report is focused on the local transportation infrastructure that is directly owned and managed by the City of San José, and which primarily consists of a 2,300-mile network of "city streets". Appendix A provides a detailed inventory and assessment of the various components of the existing system, ranging from pavement, to traffic safety devices, to landscaping.

The regional transportation network of expressways, freeways, and transit systems is also a vital part of the San José transportation infrastructure. Strategic planning efforts to address improvement needs for the regional transportation system have recently been prepared by the Santa Clara Valley Transportation Authority (VTA), in coordination with the City of San José and other local jurisdictions. These regional planning documents are titled *Valley Transportation Plan 2030* and *Long-Term Transit Capital Investment Program* and are available on the VTA's web site www.vta.org.

Chapter 1:
The San José Transportation System
"The Road Well Traveled"

The San José transportation system occupies about 25% of the land area within the City's urban boundaries. The system is defined by the public street right-of-way and includes paved travel ways and bridges for vehicles, bicycles, and pedestrians. To allow for the safe and efficient movement of travelers, the transportation system contains traffic signals, communication systems, streetlights, signs, raised islands, pavement markings, and parking facilities. In addition, street trees are located in median and sidewalk areas to provide an attractive and healthy environment. It is estimated that over 5 million trips are made daily on the City's surface transportation network.

This chapter provides a summary of the City's adopted policies related to the transportation system. Figure 1.1 contains an inventory description of the City's various transportation assets. Appendix A of this report provides a detailed description and assessment of the individual asset categories, as well as improvement needs.

Figure 1.1 – Inventory of Transportation Assets

Transportation Asset	**Inventory Size**
Paved Streets	2,300 miles
Bridges	152
Roadway Markings	6 million square feet
Sidewalks, Curbs, and Gutters	4,000 miles
Street Lights	57,000
Street Landscaping	210 acres
Street Trees	300,000
Traffic Signs	60,000
Streetname Signs	25,000
Traffic Signals	864
Traffic Signal Communication Cable	175 miles

General Plan – Vision 2020

The San José General Plan defines the scope of the major roads, bikeways, and pedestrian routes that serve the planned land uses for the City to the horizon year 2020. The City's Department of Transportation tracks the progress of completing the planned system as noted in Figure 1.2.

Figure 1.2 – Completion Status of Planned Transportation System

Transportation Facility	Planned System	Percentage Complete
Arterial Streets	450 miles	97%
Bikeway Network	300 miles	51%
Priority Pedestrian Corridors	75 miles	26%
Curb Ramps	28,000	50%
Median Landscaping	150 miles	72%

The General Plan also includes policies and goals for the maintenance of the City's infrastructure as described in Figure 1.3. This Council policy direction to efficiently manage the condition of the City's infrastructure and to seek new funding sources for operations and maintenance is the basis for raising the issues and opportunities addressed in this report.

Figure 1.3 – San José Infrastructure Maintenance Policy

"Manage City resources efficiently in order to maintain existing infrastructure and facilities and avoid unnecessary replacement costs."

"The City should explore new methods to supplement the City's resources devoted to the operation and maintenance of its infrastructure and facilities."

Source: San José General Plan

Transportation Business Plan – Goals and Performance

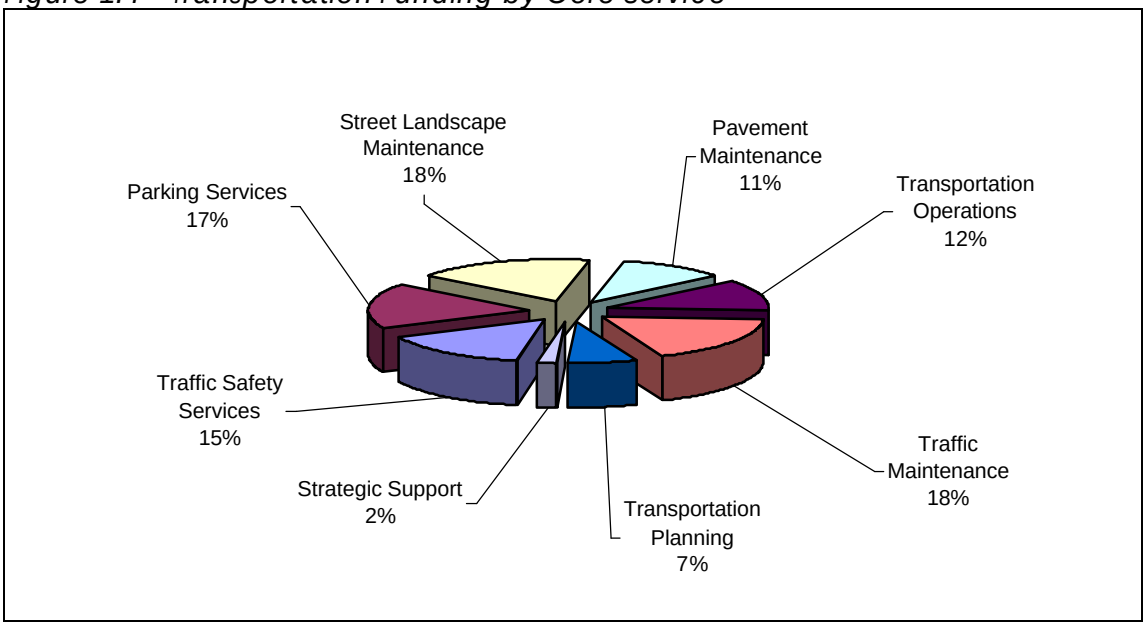
The City Service Area (CSA) structure for San José identifies "transportation services" as one of seven key "lines of business". Accordingly, a business plan has been developed for the Transportation CSA that addresses goals, budgets, and performance measurements. The three desired outcomes of the Transportation CSA are to:

- Provide viable transportation choices
- Provide safe, efficient, and neighborhood-friendly transportation operations
- Preserve and improve transportation assets to enhance community livability

The operating budget for the Transportation CSA is $63,776,000 (FY2004-05), for services provided by the Department of Transportation ($54,686,000) and the Police Department ($9,090,000 for traffic safety). The Department of

Transportation funds pay for the 388 staff employees and associated supporting equipment, materials and services (not including capital expenses). This funding is allocated among eight core services as illustrated in Figure 1.4.

Figure 1.4 – Transportation Funding by Core Service



The Transportation Business Plan provides data on trends and conditions related to the performance of the City's transportation system. Among the notable items are the following:

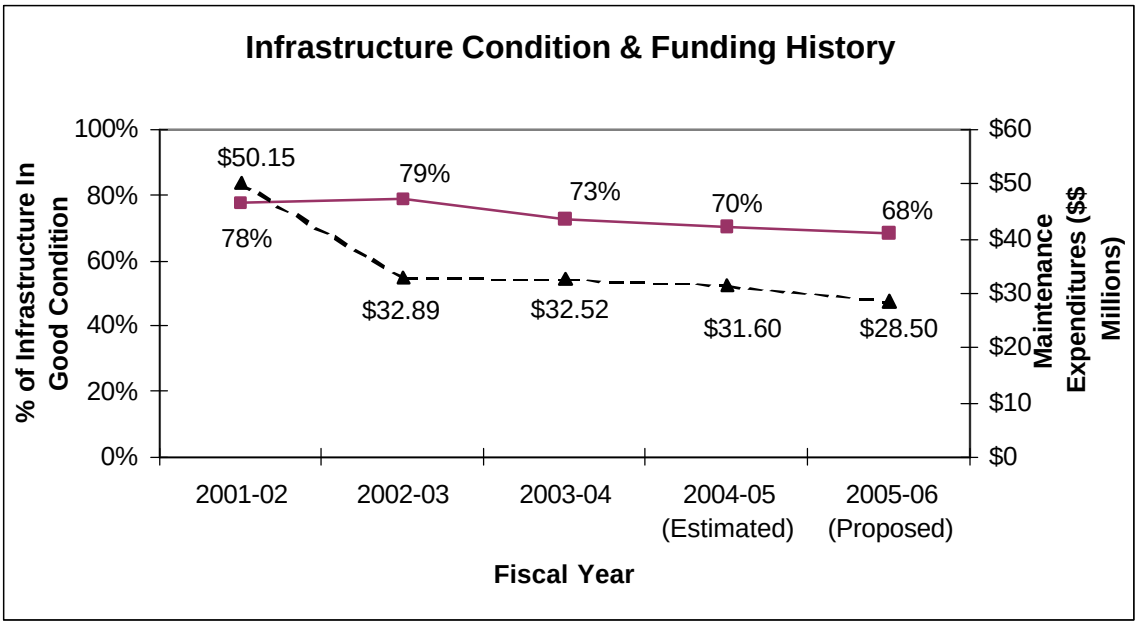
- San José has among the best traffic safety records among large cities in the nation. The City's ratio of 4.1 injury and fatality crashes per 1000 population compares well to the national average of 6.82.
- 59% of residents rate commute traffic flow on City streets as "acceptable" or better.
- San José area residents commute by: drive alone (72%), carpool (20%), transit (4%), walk/bike (3%), telecommute (1%).
- Residents rating traffic conditions as safe while: driving (81%), biking (41%), and walking (75%).
- 75% of residents rate traffic impacts in their neighborhood as "acceptable".
- Infrastructure asset inventory has grown by 12% over the last 5 years, while funding for maintenance has declined.

- The condition of assets rated as "acceptable" or better is: pavement (86%), traffic devices (62%), and streetscapes (sidewalks, lights, landscaping) (61%).

Chapter 2:
Key Issues
"On the Road to Ruin?"

The quality of the City of San José's transportation system is deteriorating. Overall transportation infrastructure condition measurements are on a downward trend as noted in Figure 2.1. This overall data addresses a composite of all transportation system assets including pavement, signs, markings, signals, lighting, and landscaping. The basic issues are a substantially decreased level of investment from Federal, State, and local funding sources, combined with an increasing inventory of infrastructure assets, and then aggravated by increased costs for materials, labor, and energy. Another equally important factor is the age of the City's infrastructure. A large portion of San José's street system developed between the 1950's and 1980's and is 20 to 50 years old. As a result, much of the infrastructure is in need of costly rehabilitation or replacement.

Figure 2.1 – Transportation Infrastructure Condition Trends



The City has proactively worked to "do more with less" for years and is considered a leader in progressive and cost-effective infrastructure management. The City's Department of Transportation has developed over the years a particularly strong culture supporting "continuous improvement" that results in the efficient use of available resources.

Nevertheless, the condition of transportation infrastructure assets is steadily declining. Since 2001-02, annual investment levels have dropped from $51.1 million to $28.5 million (projected for 2005-06) – a 44% drop in funding. In this same period, overall assets in good condition have dropped from 78% to 68%. With the resources available for necessary infrastructure maintenance shrinking, preventive maintenance activities are not being performed at desired levels and asset conditions are declining. Further compounding the situation is the fact that as the infrastructure condition has declined, more time is being spent on service requests to respond to asset failures, such as potholes, traffic signal malfunctions, and traffic signs and roadway markings repairs. Service request response activities have increased 23% over the same 5-year period.

The conclusion at this time is that improving the City's transportation system, in any consequential or meaningful way, can only be accomplished by increasing funding resources. The fixed assets that make up the transportation system are essential to the basic function, safety, and livability of the City. Therefore, it is not practical to reduce inventory as a means to reduce costs – streets can't be closed, traffic signals can't be shut off, and street trees can't reasonably be eliminated. Similarly, there is limited opportunity to manage the demand for maintenance of the system:

- Pavement naturally ages and requires major maintenance about every eight to ten years,
- Street lights and traffic signal lamps have a predictable useful life and require constant energy for operation, and
- Landscaping needs regular care to maintain a healthy condition.

This chapter explores the various conditions that have created what many are referring to as a "transportation crisis". The discussion focuses on six key issues:

1. Declining Transportation Investment
2. Increased Costs
3. Expanding Infrastructure
4. Growing Demands
5. Pavement Maintenance is the Most Serious Challenge
6. San José is an Efficiency Leader

It is noted that San José certainly is not alone in facing the challenge of a deteriorating transportation system, coupled with a severe lack of funding resources. The following is a collection of other perspectives on the topic:

- "Transportation is the most important problem facing the Bay Area region, with 26% of residents identifying it as the area's top problem in the 2004 Bay Area Poll. It's clear that the economic recovery is being felt among Bay Area residents, yet issues surrounding transportation surface as big worries. Future growth and continued competitiveness of the region

requires that we make significant progress in alleviating the shortcomings in our transportation infrastructure."

Jim Wunderman, President and CEO of Bay Area Council, November 2004

- "California cannot continue to sustain its competitiveness, economy and quality of life without maintaining and expanding its transportation infrastructure. Only through major, predictable investments in all aspects of the transportation system -- monitoring, maintenance and rehabilitation, traffic operations, traffic management, and road and transit capacity enhancement -- can California protect its position in the national marketplace and global economy."

  Governor Arnold Schwarzenegger, 2005-06 Budget Summary, January 2005

- "Poor road conditions cost US motorists $54 billion per year in repairs and operating costs -- $275 per motorist. Total spending of $59.4 billion annually is well below the $94 billion needed annually to improve transportation infrastructure conditions nationally. The nation is failing to maintain even the current substandard conditions, a dangerous trend that is affecting highway safety and the health of the economy."

  American Society of Civil Engineers, 2005 Report Card for America's Infrastructure, March 2005

- "[Lack of transportation funding] is a genuine crisis, one that affects virtually every Californian and that threatens the state's economic vitality. Why it is not getting the serious, bipartisan political attention it deserves is an unfathomable mystery."

  Dan Walters, Sacramento Bee Columnist, March 2005

Key Issue 1: Declining Transportation Investment

Funding for transportation has declined from all sources especially since the significant downturn in the local and State economy, starting in 2001. Examples of reduced funding include:

- 44% reduction in City funding for infrastructure maintenance since 2001-02 (includes reduced revenues from grant sources)

- State "raid" of transportation budget in the amount of $4 billion

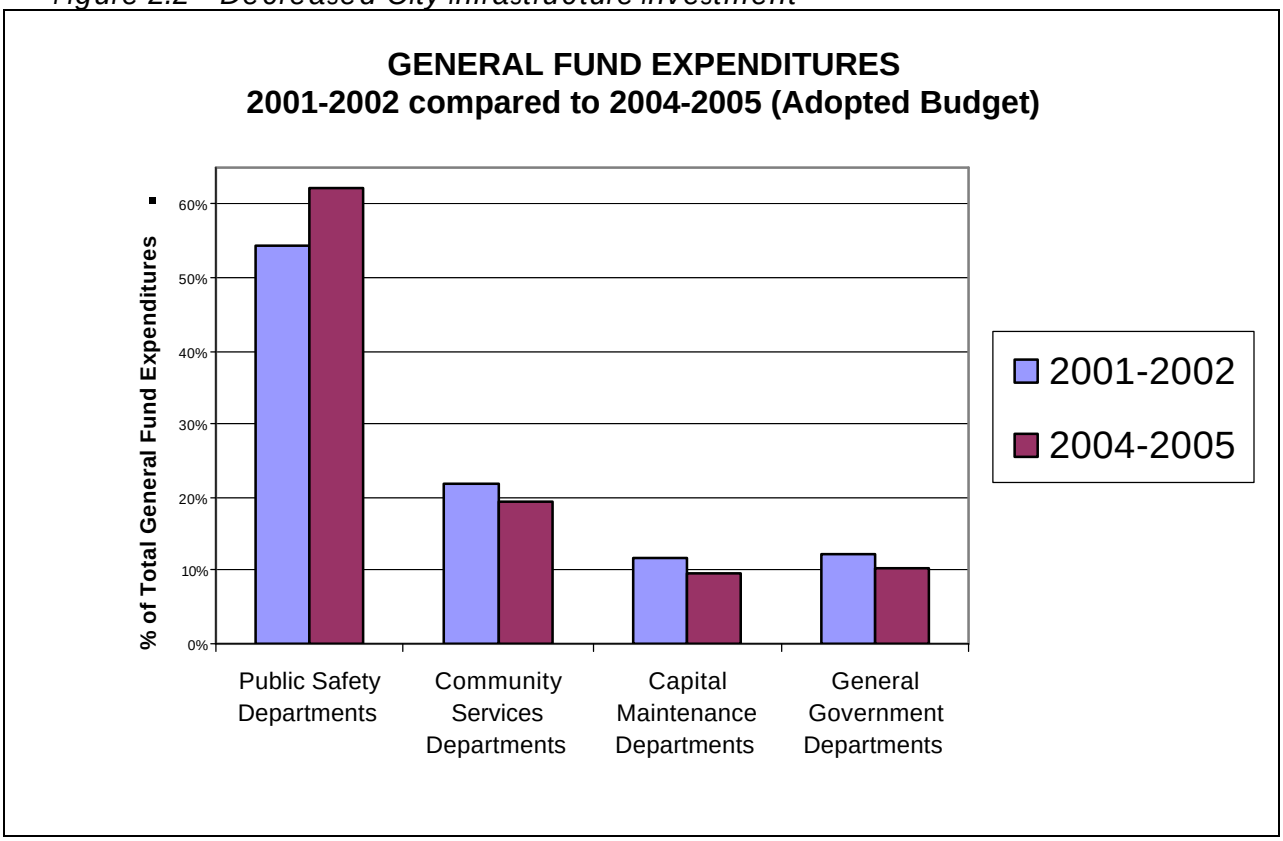
- Delay of new Federal transportation funding bill since 2003

- Expiration of 1996 Measure A/B transportation program, which provided funds to cities for local pavement maintenance over a 9-year period (San José share was $36 million)

Reduced City Investment in Infrastructure Maintenance

In addition to an overall declining amount of City funding for infrastructure maintenance, the City's capital maintenance departments (such as the Departments of Transportation and General Services) have suffered significant budget reductions over the past 4 years. As shown in Figure 2.2, and as presented at the Budget Study Session on January 21, 2005, maintenance department funding has declined from 12% to 9% of the City's General Fund budget.

Figure 2.2 – Decreased City Infrastructure Investment



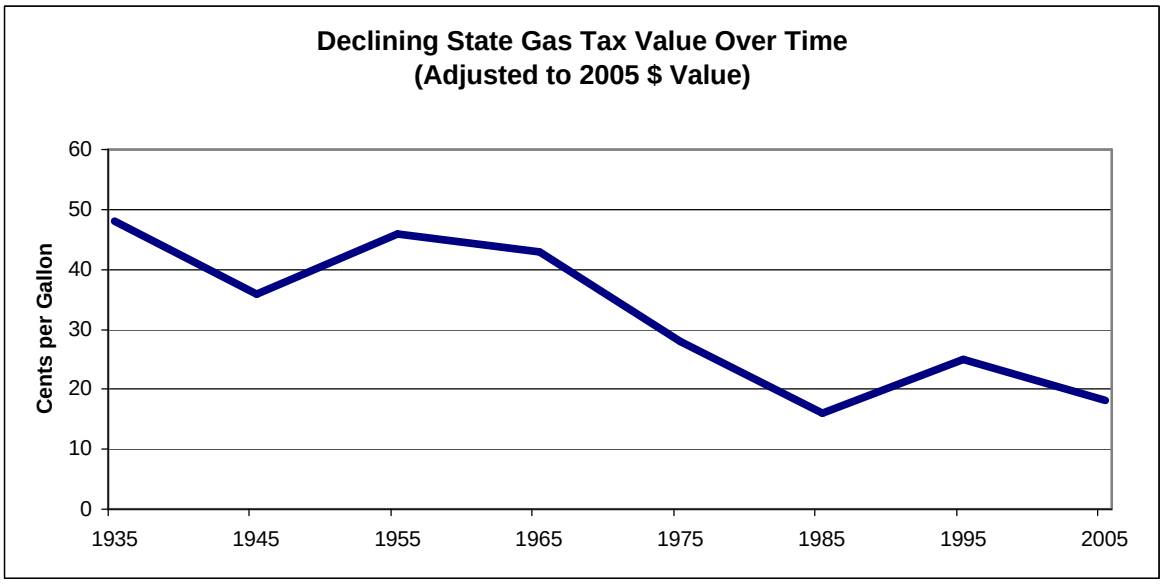
Declining Value of Gas Tax

A major funding issue is the declining value of gas taxes. The gas tax has been the traditional method of financing transportation improvements for over 80 years. However, the tax rate is set at a flat amount per gallon of gas. The federal tax is 18 cents per gallon and the State of California tax is 18 cents per

gallon. It is noted that the California gas tax is lowest in the western United States. The tax rates in other states are: Nevada, 23 cents; Oregon, 24 cents; Washington, 28 cents; Utah, 24.5 cents; Colorado, 22 cents; and Arizona, 18 cents.

Another significant concern with the gas tax is that is has not been adjusted since 1995. As a result, the purchasing power of the gas tax has steadily been eroded by inflation, as shown in Figure 2.3. Also, as other fuels sources are increasing in popularity (electricity, hybrid, CNG, hydrogen), the gas tax base is further declining against an increasing demand for travel and infrastructure investment.

Figure 2.3 – California Fuel Tax Loses Value



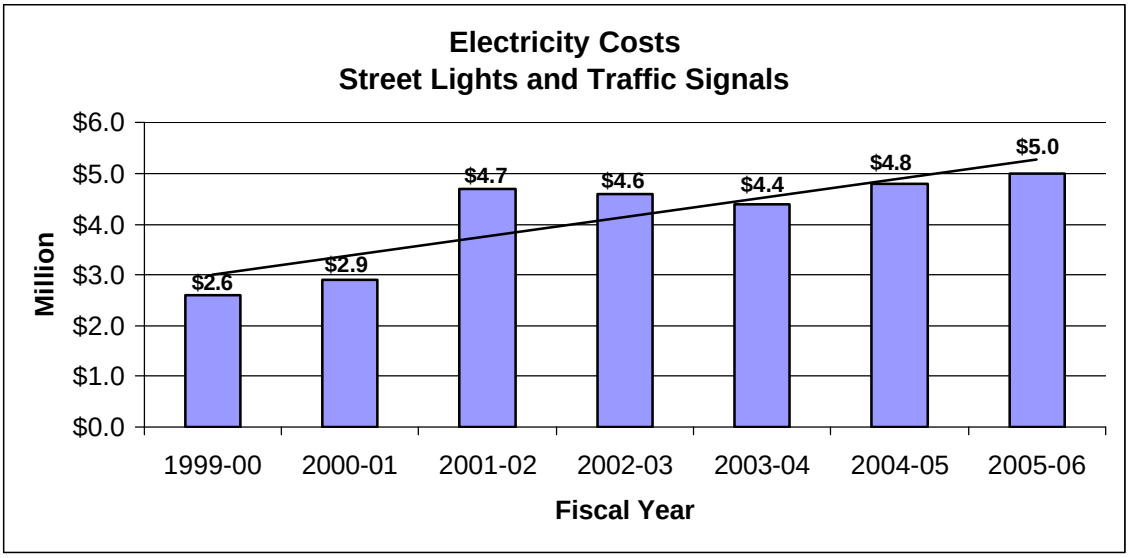
Gas taxes are the primary source of funding for the State and Federal transportation budgets. These budgets finance major transportation infrastructure investments and various grants programs that cities and regions can compete for. However, to a large degree the funds are "returned to source" for direct use or allocation by MTC, VTA, or cities. The direct subvention of State gas tax funds to San José is about $19 million annually. These funds are contained in the City's General Fund and are used to partially fund the City's annual transportation operating budget of $64 million. Clearly, the gas tax does not come close to funding the real costs to maintain and operate the transportation system. Subsidies to operate the highway system are required from other sources to address needs and increasingly these needs go unfunded. In San José, other sources used for basic transportation operations and

maintenance include the General Fund as well as capital funds generated by development fees.

Key Issue 2: Increased Costs

Just like any other business, the City has had to deal with rising energy costs. As shown in Figure 2.4, electricity costs, which fund the operation of infrastructure assets such as traffic signals and streetlights, have nearly doubled in the last seven years. In the last three years alone, oil and gasoline prices have doubled. (Oil prices have risen from $26 per barrel at the end of 2001-02 to over $51 per barrel currently. Gasoline prices have risen from $0.83 per gallon at the end of 2001-02 to over $2.50 currently.) As energy costs rise, so does the cost of doing business. Operating vehicles and equipment becomes more expensive. The cost of goods and services purchased by the City also rises. Not only are materials more expensive for contractors to produce, they are also more expensive to deliver.

Figure 2.4 – Escalating Energy Costs



The City has also seen other rising costs of doing business related to employee wages and benefits. Employee benefit costs, in particular, such as medical insurance and retirement, continue to rise substantially, as do workers' compensation costs.

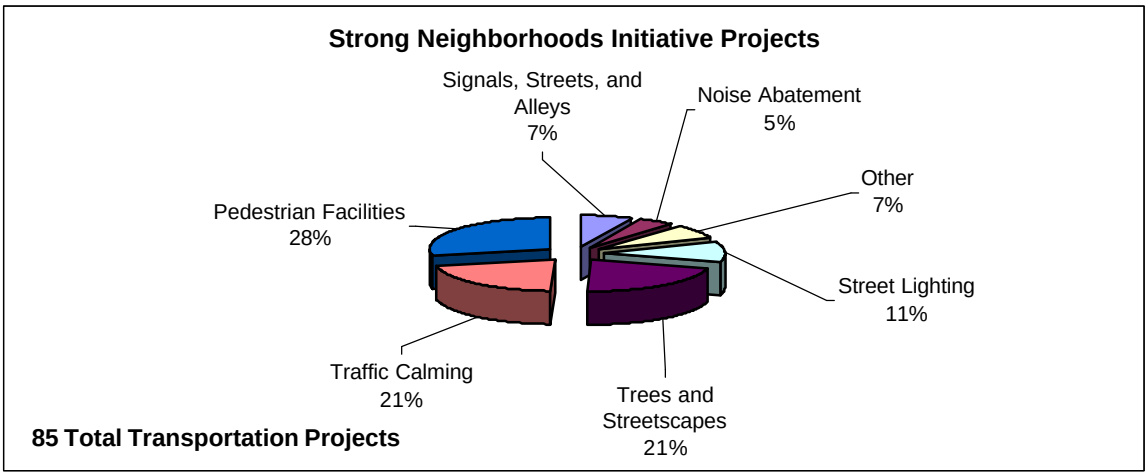
Key Issue 3: Expanding Infrastructure

The size of the infrastructure network, across the board in all assets, continues to expand. By the end of 2005-06, infrastructure inventories will have experienced five years of substantial growth. For example, street landscape inventories will have increased by over 20% and traffic signal inventory will have increased over 9%. Growth in other assets, such as streetlights, traffic signs, and roadway markings are more moderate (under 4%), but are growing nonetheless.

Strong Neighborhoods Initiative Program

Part of the growth in infrastructure assets is attributable to strong public interest and priority given to improved transportation facilities and services. As an example, the City's Strong Neighborhoods Initiative (SNI) program has identified 85 transportation projects as high priorities (see Figure 2.5).

Figure 2.5 – Transportation Related SNI Priorities



Proposals for State Route and County Expressway Relinquishment

Facilities owned by Caltrans and the County that traverse San José have been proposed for relinquishment to the City. The specific facilities are noted in Figure 2.6. The benefit of relinquishment is that it allows for local control and efficiency for addressing design issues, community interests, transit improvements, private development, and special events. However, as a consequence the City would need to assume responsibility for the ongoing maintenance and operations of additional infrastructure assets. The added costs are estimated to be $2.4 million annually. Given the current funding shortfalls, any increase in the size of the City's infrastructure would result in reduced service levels Citywide.

Figure 2.6 – Caltrans/County Relinquishment Proposals

Location	Owner	Annual Cost
State Route 82 (The Alameda/Monterey Highway) from 880 through Downtown to 101/Blossom Hill	Caltrans	$1.5 million
State Route 130 (Alum Rock Avenue) from 101 to 680	Caltrans	$0.1 million
Capitol Expressway from 680 to 87	County	$0.8 million

Key Issue 4: Growing Demands

There is an increasing demand for maintenance services in the Downtown and the Neighborhood Business Districts (NBDs).

Currently, services for streetlight maintenance, street sweeping, roadway markings maintenance, and blight abatement currently occur throughout Downtown at levels higher than other areas of the City. Prior to 2003, it was estimated that the General Fund contributed approximately $1.2 million annually for enhanced maintenance services, compared to $71,000 for an equivalent sized area Citywide.

Specific areas, like the Transit Mall, South First Street, and San Pedro Square, receive additional cleaning services, such as portering (general cleanup of litter, gum, and debris) and sidewalk power washing. However, reductions in the General Fund since 2003 have reduced services across the board, including a one-third reduction for enhanced cleaning services in Downtown, and further reductions are contemplated for next fiscal year. Funding from other sources, like the San José Redevelopment Agency, the Integrated Waste Management Fund, and the Storm Sewer program, contribute nearly $700,000 for blight abatement and street sweeping throughout the Downtown and the NBDs.

Implementation of the Downtown streetscape, lighting, and signage master plans will increase the demand for maintenance funding as the new infrastructure is constructed in Downtown. Ultimately, if all recommended streetscape elements were constructed - which is not expected for 10-15 years - it is estimated that annual funding needs operations and maintenance would exceed $3 million in today's dollars. For Neighborhood Business Districts, it is estimated that approximately $330,000 in additional funds would be required annually to provide enhanced cleaning services, such as portering and sidewalk power washing to reach higher, but not ideal, levels of cleanliness in the NBD's.

Key Issue 5: Pavement Maintenance is the Most Serious Challenge

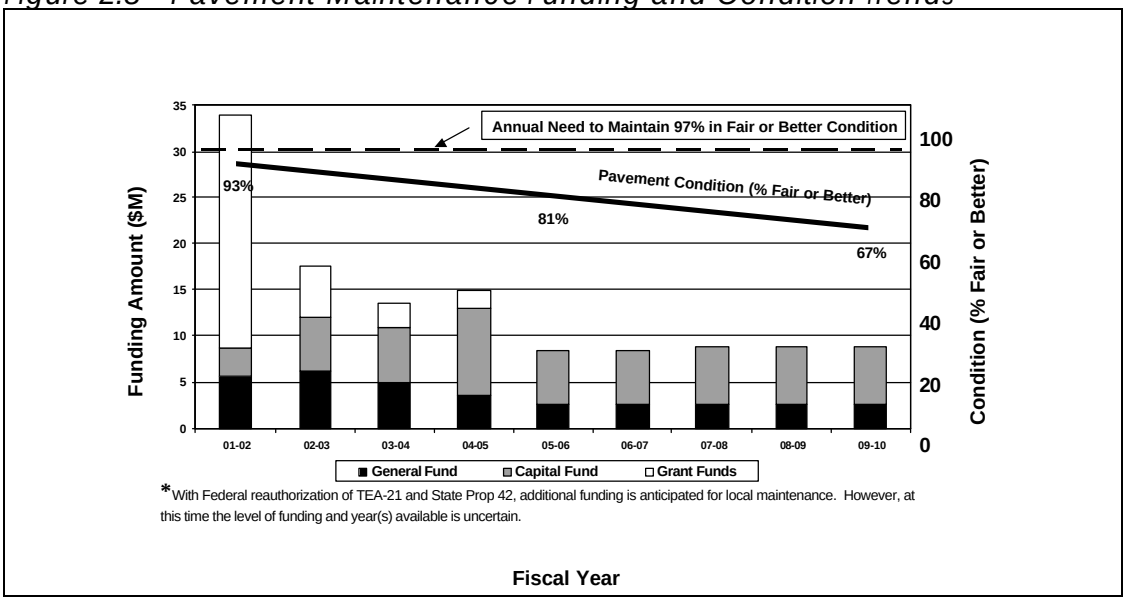
Of all the Transportation-related assets, street pavement is the most unique situation and poses the most serious challenge. The sheer size of the asset inventory (2,300 miles of paved roads valued at $1.2 billion) requires a large commitment of resources. $30 million is needed annually to maintain the goal of 97% of City streets in acceptable or better condition. Looking at the City's current and forecasted funding situation, along with the City's historical reliance on grants and other short-term and one-time funding sources to fund the pavement maintenance program, it is difficult to foresee a time when the program would be consistently funded at that annual level.

Coupled with the sheer magnitude of such an annual funding need is the unique nature of pavement deterioration. Unlike many other assets, pavement deteriorates in a manner that requires different types of treatments at different stages. The further that pavement deteriorates, the more costly the treatment. The $30 million annual need is based on nearly all streets receiving proper treatments -- sealing or resurfacing -- at the appropriate time. When streets do not receive a preventive surface seal treatment, they continue to deteriorate and eventually require a more extensive treatment, such as resurfacing, to repair the further damage and return them to the proper condition level. Currently, it costs about five times more to resurface a street than it does to apply a surface seal.

The recent fall off in street maintenance funding is driving up the number miles in need of resurfacing. By the end of 2004-05, 16**%** of City streets will be in need of resurfacing; it is estimated that by the end of 2005-06, it will increase to 19%, requiring approximately $130 million to address. Based on projected funding levels, that need will increase further to 33% and will cost approximately $225 million by the end of 2009-10.

Figure 2.8, illustrates the relationship of a severely under funded pavement maintenance program to a steady decline in pavement conditions. Unless funding levels are increased, by 2009-10 67% of the City's streets will be in fair or better condition. Or in other words, 33% of San José streets will be rated as in poor condition.

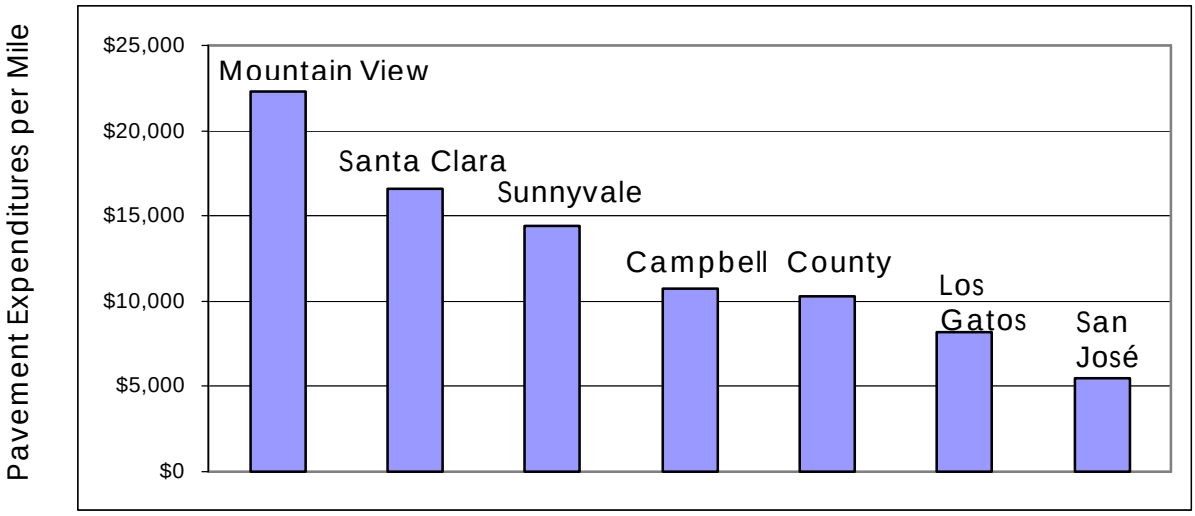
Figure 2.8 – Pavement Maintenance Funding and Condition Trends



As the condition of the street network continues to deteriorate, the public will directly incur higher costs, such as damage to their vehicle or increased travel times, due to pavement damage and rideability issues. To address safety and other corrective-type issues, staff has budgeted nearly one-third of the 2005-06 budget to fund corrective and spot rehabilitation activities. If resources continue to shrink and the street network continues to deteriorate, these activities could become the primary street maintenance program activity.

Perhaps the most striking information source related to San José's investment in pavement maintenance is the comparison with neighboring jurisdictions reported in MTC's 2000 Pothole Report. As shown in Figure 2.9, San José allocated the lowest level of funding for pavement maintenance per mile (of all South Bay cities for which data was available). It is worth noting that staff is researching the availability of more current data.

Figure 2.9 – Pavement Funding Comparison with Other Jurisdictions



Source: MTC 2000 Pothole Report

Key Issue 6: San José is an Efficiency Leader

Staff continues to explore opportunities and implement methods to contain costs and increase efficiencies. In the last three years alone, staff has been involved with the following:

- Combine various maintenance crews to take advantage of activity seasonality.
- Combine purchases of materials and services across activities or across fiscal years to take advantage of economies of scale.
- Evaluate and utilize new technologies, such as energy-efficient LED traffic signals and street resurfacing alternatives to decrease maintenance costs.
- Implement information technology improvements to take advantage of better methods to monitor asset inventories and track maintenance activities and costs.
- Implement more efficient design standards for landscape maintenance in order to contain maintenance costs and better ensure long-term viability of plant life.

Along with these internal activities, City staff continuously looks for partnership opportunities with community groups and programs, such as Our City Forest and the Adopt-A-Street program, in order to increase community interest in infrastructure asset condition and maintenance and to take advantage of community resources.

Chapter 3
Improvement Strategies
"Follow the Yellow Brick Road"

The magnitude of the City's funding shortfall for transportation needs is so great that it can't practically be resolved by a single action. Instead it will likely require the pursuit of many separate initiatives over a number of years to create a comprehensive solution. This chapter provides a discussion of the possibilities available to generate increased revenue to meet the needs of the transportation system. These include legislative advocacy actions to increase funding from regional sources as well as a variety of local options. Finally, a "potential strategy" is offered that illustrates an example of how a variety of measures can be packaged together to provide a comprehensive solution.

Legislative and Regional Solutions

This section describes a set of policy initiatives that the City can advocate with regional agencies as part of the City's legislative agenda, and to a large degree this is already a work in progress. Key organizations that the City partners with for regional policy advocacy are:

- Santa Clara Valley Transportation Authority (VTA)
- Metropolitan Transportation Commission (MTC)
- Silicon Valley Leadership Group (SVLG)
- League of California Cities (LCC)
- National League of Cities (NLC)
- State and Federal Legislative Representatives

Establish "Fix it First" Policies

The use of transportation funding for new capital projects has generally been more popular than paying to fill potholes. Increasingly though, it is being recognized that first taking good care of what you already have is a sound investment. Recently through MTC, "fix it first" policies have been adopted that have led to an increased allocation of Federal gas tax funds to cities for pavement maintenance. MTC has also worked closely with Bay Area cities to standardize Pavement Management Systems and to compile a comprehensive inventory of local street pavement conditions and funding needs.

In the Bay Area, the 30-year pavement maintenance funding need is $14 billion for local arterial streets. MTC is proposing to allocate Federal gas tax funds to cover $9 billion (or 64%) of the need on arterial streets only. It is noted that the MTC funding commitment is oriented towards arterial streets that are considered

to have regional significance. These streets are the major thoroughfares that carry significant traffic volumes and support bus transit services. San José has about 400 miles of arterials streets, representing 17% of the City's overall street network.

San José Department of Transportation staff participates on MTC's Local Streets and Roads Committee as well as the Bay Area Partnership to advocate for local transportation needs. The VTA has also committed to making discretionary regional funds available for local pavement maintenance. The VTA's 30-year regional transportation master plan, known as the Valley Transportation Plan 2030 (VTP 2030), proposes an allocation of $301.5 million for pavement maintenance. It is noted that this includes funding from Federal gas tax sources made available to local jurisdictions in Santa Clara County. Prorated over a 30-year period, the VTA funding allocation goal translates into about $5 million annually for San José.

Adopt New Federal Transportation Bill

The last major federal transportation bill referred to as the Transportation Efficiency Act for the 21st Century (TEA21) expired in 2003. A new transportation bill is being developed and is proposed for completion and approval in 2005. The new bill is expected to provide discretionary funding to MTC for their subsequent allocation. As noted above, MTC has already adopted policies to allocate federal funds to cities for pavement maintenance. These funds are designated for use only on arterial streets. It is estimated that the average annual funding allocation for San José will be $3.3 million and the first allocation of funding is proposed for 2005-06.

"Rescue" State Proposition 42

In March 2002, California voters approved Proposition 42 (by a 69% margin) directing the allocation of gasoline sales tax funds for transportation purposes. This program was expected to initially provide San José with $2 million annually for pavement maintenance and then beginning in 2008-09 the amount would increase to approximately $8 million annually. Proposition 42 does contain an "escape clause" allowing the State to withhold the funds in the event of a "fiscal emergency". Since 2003 the State has withheld the Prop 42 funds and the Governor has proposed to continue this through 2006-07.

A significant State legislative priority for San José and other transportation stakeholders is to "rescue" Prop 42 by placing "firewalls" around the funds to protect them from future State raids. The Governor has proposed to restore the Prop 42 program beginning in 2007-08 and to repay the withheld funds over a 15-year period.

Pursue New Transportation Sales Tax Measure

Many counties in California have approved transportation sales tax measures. The majority of the funding is often allocated for major regional transit or highway projects. However, increasingly these county transportation tax programs are providing funds to cities for local pavement maintenance and other local needs, typically with funding levels in the range of 20% to 25%, and as high as 43%. A few examples are noted in Figure 3.1.

Figure 3.1 – Local Transportation Funding from Sales Tax Measures

County	Allocation to Cities	Local Uses of Funds	Voter Approval Date and Rate
Alameda (Measure B)	24.5%	Road maintenance/ improvements; bike/ped facilities	2000 – 81%
San Francisco (Measure K)	25%	Road maintenance/ improvements; bike/ped facilities; curb ramps	2003 – 75%
San Mateo (Measure A)	22.5%	Road maintenance/ improvements	2004 – 76%
Contra Costa (Measure J)	18%	Road maintenance/ improvements	2004 – 71%
Sacramento (Measure A)	43%	Road maintenance/ improvements; streetscapes; bike/ped facilities; curb ramps	2004 – 75%
San Diego (Measure A)	17%	Road maintenance/ improvements; bike/ped facilities	2004 – 67%
San Bernadino (Measure I)	20%	Road maintenance/ improvements	2004 – 79%

The 1996 Measure A/B program in Santa Clara County included a local pavement maintenance program that provided San José with approximately $36 million over the 9-year term of the measure (an average of $4 million per year).

The VTA is considering a new permanent 1/2-cent sales tax measure for transportation that would allocate 75% of the funds for transit, and 25% directed to cities and the County for local pavement maintenance and other local transportation needs. The estimated share of these funds for San José is $15 million annually. If successful this funding proposal would provide a tremendous boost towards achieving a sustainable funding source for San José's transportation system.

The Silicon Valley Leadership Group is exploring an alternative transportation funding program for Santa Clara County that consists of a 1/4-cent sales tax for a 30-year period. This mostly funds transit projects and services but it also includes

a modest allocation for local pavement maintenance. As currently proposed, the SVLG initiative would provide $4 million annually for San José pavement needs.

The VTA and SVLG proposals are being contemplated for a November 2006 vote. Either measure would require a 2/3rd majority approval. Based on recent polling, the more modest SVLG program is showing 61% voter support from likely voters.

Update and Adjust Gas Tax

Gas prices are currently at an all time high, however transportation revenues are not increasing in proportion to gas prices. As noted in Chapter 2, the State and Federal gas taxes are set at a flat rate per gallon. The purchasing power of the tax has steadily eroded since it was last adjusted in 1991. Costs have escalated by over 50% due to inflationary costs for labor and materials, but the gas tax has remained at the same level. Also, as more vehicles are using alternative fuel sources (such as hybrid vehicles), this serves to create a further imbalance between gas tax revenues and the cost to support the transportation system.

Attempts to remedy the eroding gas tax base include the following:

- Increase the gas tax periodically
- Index the gas tax automatically to adjust for inflation or to convert the gas tax to a percentage of the fuel cost
- Shift to a more direct user fee based on miles traveled (i.e., a "mileage tax") to provide equity in revenue collection from all motor vehicles regardless of fuel efficiency and fuel source.

The MTC has legislative authority to initiate a ballot measure to consider a 10-cent gas tax increase in the Bay Area. As a general estimate, a 10-cent gas tax increase in the Bay Area could generate about $10 million annually for San José transportation needs. In general, gas tax adjustments have proven to be unpopular with the public and elected officials. Polling for such a measure has not shown sufficient support to warrant pursuing this.

However, in response to the current "transportation funding crisis" proposals are being raised in the State and Federal legislatures to both increase and index the gas tax, and the State of Oregon is actively studying a "mileage fee" program.

Enact Vehicle Registration Surcharge

In 2003, the State of California reduced Vehicle License Fees (VLF) by 65%, effectively reducing the State's tax base by $4.1 billion. These funds were previously allocated to local government for a variety of purposes including transportation and the San José share was $11.1 million annually. It is noted that

the State has partially offset the reduced VLF revenues to cities from other sources.

Recently State legislation has been proposed to allow local counties to impose new vehicle registration fees for transportation purposes. In 2004, San Mateo County was authorized to enact a $4 annual fee per registered vehicle. In 2005, SB 680 (Simitian) has been proposed to allow an annual $5 vehicle registration surcharge for an 8-year period in Santa Clara County.

These funds would support a combination of regional and local programs. It is estimated that roughly $1 million per year would be available for improvements to San José transportation facilities. The program is oriented toward traffic congestion relief improvements, accordingly it is anticipated the funds would be used to upgrade San José's aging traffic signal system with new technology and hardware allowing for more efficient traffic flow.

Local Options

This section describes a variety of actions that the City can consider to improve the availability and sustainability of local funding for San José's transportation system.

Continue "Smart Growth" Land Development

From the 1950's to the 1980's, San José growth and development consisted mostly of suburban, low-density development. A sprawling network of wide streets, cul-de-sacs, and large signalized arterial intersections characterizes the transportation system that supports this development pattern. As a result, the City has a massive inventory of transportation assets (pavement, signals, lighting, signs, and landscaping) spread over a large geographic area, and supported by a relatively low-density population and business base. The City's "low density" tax base is not sufficient to sustain the size of the built infrastructure.

The City's current smart growth policies focused on economic development and in-fill, with higher density land uses allowing for the problem to be alleviated over time. Smart growth has the promise to increase the City's tax base without having a corresponding increase to the City's transportation infrastructure.

Establish Downtown and Business Improvement Districts

The City's Downtown area and neighborhood business districts generally request higher quality standards and levels of service in order to provide an attractive environment for their customers. Special facilities and services include increased lighting, tree planting, tree trimming, banners, sidewalk cleaning, benches, trash receptacles, and enhanced crosswalks. It is common practice for business

districts to form special tax districts to generate funding for enhanced City services.

Recently, there has been some interest by Downtown stakeholders and representatives from the NBDs to form special districts fund enhanced maintenance services in these areas. Special districts are a funding mechanism through which a special assessment or tax is used to finance improvements or services within a designated area. Special districts exist in downtowns and business districts throughout the country, from small cities in New York, to cities like Los Angeles, Chicago, Philadelphia, Sacramento, Long Beach, and San Diego. Research indicates the San José has not pursued or utilized this public/private partnership tool to the level that other jurisdictions have.

Enact Downtown Parking Surcharges

The City operates parking lots and garages in the Downtown area providing 5526 spaces. Parking fees are charged during weekdays that generate revenues for the Parking Fund to operate facilities and finance parking improvements. During evenings and weekends parking is free. A surcharge on parking rates and a nominal charge for evenings and weekends could be implemented providing revenue to support enhanced services for Downtown streets and sidewalks. It is also noted that in 2003 the Redevelopment Agency adopted enhanced standards for Downtown streetscapes, lighting, signage, and crosswalks. However, no source of operating funds has been identified to support the new standards. A Downtown parking surcharge could potentially help finance enhanced services for Downtown.

Adopt Utility Trench Cut Fee

Several cities in California have adopted utility trench cut fees or street deterioration fees, including San Francisco, Union City, Santa Ana, and Sacramento. The intent of the fee is to generate funding to repair pavement damage caused by pavement trenching work associated with the installation of underground utilities (such as gas, electricity, cable, phone, and water). These fees are controversial and have been the subject of litigation from utility companies. The courts have ruled against the San Francisco and Union City fees and both cases are under appeal. A basic issue is that existing utility franchise agreements already require utility companies to repair street damage "to a useful, safe, and durable condition to the satisfaction of the City Engineer". The utility companies contend that a separate utility fee is "double charging". Also, from a practical perspective, the amount of funding that a fee could generate is relatively small compared to the cost it takes to implement and manage the fee. In Sacramento, their estimate of annual revenue is less than $100,000.

Assess New Development Fees

City staff has been requested by the Building Better Transportation Committee to explore the potential of having new private development projects contribute to upgrading the transportation infrastructure in the vicinity of the project (Committee Agenda 05-02-05, Item C1). The City does impose conditions on private development to upgrade the infrastructure at the direct frontage of the project if conditions are substandard. However, beyond the development's frontage the City is limited by "nexus law" on imposing conditions that are not direct and proportional to impacts created by the development. Pursuing developer funding for pavement maintenance has similar legal and implementation issues as the utility trench cut fee mentioned above.

Establish Citywide Assessment Districts

The City could propose a property assessment for transportation system maintenance and operations in general, or for a particular citywide service like pavement maintenance or street lighting. Such an action would require a 2/3rd approval of City voters. This would be similar to assessments the City has for storm drainage and sanitary sewers. Examples of current benefit assessment districts are noted in Figure 3.2.

Figure 3.2 – Benefit Assessment District Examples

Jurisdiction	**Service Provided**	**Parcel Cost (Annually)**
City of San José	Sanitary and Storm Sewers	$271
City of San José	Library	$ 25
Santa Clara Valley Water District	Flood Control	$ 30
Santa Clara Valley Water District	Clean and Safe Creeks	$ 41
Santa Clara County	Vector Control	$ 5
Open Space District	Open Space Acquisition	$ 32
Alameda County	Street Lighting	$ 15

Note: "Parcel Cost" is based on single family residential household

Evaluate Local Bond Measure

Recently, the City successfully gained voter approval of bond measures to improve park, library, police, and fire facilities. These measures passed by over 2/3rd approval rates as noted in Figure 3.3. A similar effort could be initiated for improving the City's transportation infrastructure. The measure could include major rehabilitation to the City's pavement infrastructure along with system enhancements like pedestrian safety improvements, ADA curb ramp installation, traffic signal upgrades for congestion relief, and street trees/ median island landscaping for aesthetic enhancements. The evaluation of such a measure

for transportation would need to be weighed in the context of other community priorities, and packaged accordingly.

Figure 3.3 – Recent San José Bond Measures

Service Provided	Voter Approval Rate	Funding
Park Facilities	79%	$228 million
Library Facilities	67%	$212 million
Public Safety Facilities (Police/Fire)	72%	$159 million

Potential Strategy

This chapter has presented a variety of regional and local funding options that can help resolve the severe funding shortfall the City faces to adequately maintain, operate and improve the City's local transportation system. In summary, the City's Department of Transportation has estimated the magnitude of the City's transportation needs to be:

- $30 million for annual operating and maintenance costs (increased amount over existing funding)
  - $22 million for pavement maintenance
  - $1.1 million for traffic signal systems
  - $0.3 million for roadway markings and striping
  - $1.2 million for sidewalk repair
  - $0.4 million for street light maintenance
  - $1.1 million for street landscaping
  - $1.5 million for tree trimming
  - $0.4 million for traffic control and streetname signage
  - $2.0 million for Downtown and NBD cleaning and maintenance

- $370 million for one-time rehabilitation and capital costs
  - $209 million for pavement maintenance
  - $20 million for street reconstruction
  - $18 million for curb and gutter repair
  - $31 million for new street lighting
  - $50 million for curb ramps
  - $26 million for median island landscaping
  - $16 million for traffic signal system rehabilitation

There are numerous ways that the various funding options can be combined to provide a complete funding solution or to address the most critical needs. This section presents one scenario on how a funding strategy might be packaged together. The proposal is based on selecting the funding options that seem to have the greatest viability at the present time. It is expected that addressing the

transportation funding shortfall will be an ongoing and long term effort -- one that will require a regular reassessment to adjust to changing conditions and opportunities.

The table in Figure 3.4 presents a summary of a potential funding strategy and assumptions. The key elements are as follows:

1. Increase the allocation of Federal gas tax funds by $4 million annually for pavement maintenance. Subject to approval of new Federal transportation bill, funding could be available as soon as 2006.

2. Preservation of State Proposition 42 funds, providing $8 million annually beginning in 2008 for pavement maintenance.

3. Approval of Vehicle Registration Surcharge authorization (SB 680-Simitian) and subsequent approval by VTA Board, providing $1 million annual for traffic signal system improvements starting in 2006.

4. Implementation of a new Countywide Transportation Tax Measure (1/2-cent sales tax or ¼-cent sales tax), allocating a share for local pavement maintenance, providing San José with at least $10 million annually to be used for ongoing preventative pavement maintenance. This new measure is being considered for the November 2006 ballot.

5. Increase in State gas tax by 10 cents, providing $10 million annually to San José for transportation system maintenance, including pedestrian facilities, street trees, and median islands. Gas tax changes assumed to be implemented by 2010.

6. In addition to other City neighborhood infrastructure needs (e.g., technology, housing), voter approval of a City Bond Measure providing $211 million for Citywide pavement rehabilitation, upgraded traffic signal system, ADA curb ramps, street trees and median island landscaping. The bond measure could have a 10-year term having a cost of approximately $90 annually per single family dwelling. It requires a 2/3rd voter approval and could be presented for consideration in November 2008.

7. Enact a Downtown Parking Surcharge or modify the Downtown Free Parking program to generate $2 million annually to finance enhanced streetscapes, cleaning, and pedestrian facilities. Potential consideration in 2006.

8. Establish Neighborhood Business Improvement Districts to generate $1 million annually to finance enhanced streetscapes, cleaning, and pedestrian facilities. Potential development between 2006 and 2010.

9. Create a Citywide Street Lighting Benefit Assessment District allowing the City to maintain and enhance Citywide street lighting services and to retrofit the system to deploy new, low-energy technologies. Potential funding level is $4.4 million ongoing and $31 million one-time. Estimated cost is $20 per single-family dwelling. It requires 2/3rd voter approval and could be considered for November 2008.

Figure 3.4 - Potential Funding Strategy for Unfunded San José Transportation Needs

	Pavement	Traffic Signal System/ Signs/ Markings	Curb Ramps/ Sidewalks/ Gutters	Street Lighting	Street Trees/ Median Islands	Downtown/NBD Enhancements	Total
Current Funding/ Needs							
Current City Funding (Millions)	$8	$5	$1	$4	$1	$1	$20
Unfunded Needs (Millions)	$22 Ongoing $229 One-Time	$ 1.8 Ongoing $ 16 One-Time	$1.2 Ongoing $68 One-Time	$0.4 Ongoing $31 One-Time	$2.6 Ongoing $26 One-Time	$2 Ongoing $20 One-Time	$30 Ongoing $370 One-Time
Funding Strategy							
Regional							
• Federal Gas Tax Allocation	$4 Ongoing						$4 Ongoing
• Vehicle Registration Surcharge (SB680)		$1 Ongoing					$1 Ongoing
• State Proposition 42	$8 Ongoing						$8 Ongoing
• New County Transportation Tax	$10 Ongoing						$10 Ongoing
• VTP 2030	*$1 Ongoing* $20 One-Time						$20 One-Time
• State Gas Tax Increase	*$5.4 Ongoing* $108 One-Time	$0.8 Ongoing	$1.2 Ongoing		$2.6 Ongoing		$4.6 Ongoing $108 One-Time
City							
• City Bond Measure •	$101 One-Time	$16 One-Time	$68 One-Time		$26 One-Time		$211 One-Time
• Business Improvement Districts						$2 Ongoing $20 One-Time	$2 Ongoing $20 One-Time
• Street Lighting Assessment District				$0.4 Ongoing $31 One-Time			$4.4 Ongoing $31 One-Time

Appendix A:
Condition Assessment for Existing Assets

- Pavement Maintenance
- Roadway Markings and Striping
- Sidewalks, Curbs and Gutters
- Streetlights
- Street Landscape
- Street Tree Maintenance and Care
- Traffic Control and Streetname Signs
- Traffic Signals and Intelligent Transportation Systems

Pavement Maintenance

Asset Profile

San Jose has approximately 2,300 thirty-foot equivalent miles of paved roads. Their primary purpose is to safely and efficiently carry vehicular traffic. As a whole, this asset is valued at $1.2 billion.

The City uses the Bay Area Metropolitan Transportation Commission's Pavement Management System (PMS). The PMS applies a Pavement Condition Index (PCI), which rates streets from 0 to 100. A street rated 100 would be in excellent condition and one rated at 0 would have exhausted its useful life and be in need of complete reconstruction.

By the end of 2004-05, the City will have 84% of its pavement infrastructure rated at a PCI of 50 or above. Figures 1, 2, and 3 illustrate pavement sections with PCI ratings of approximately 90, 45, and 25, respectively.

The life expectancy of the pavement is affected by the constant exposure to traffic loads and to the environment. As the pavement deteriorates, it starts to exhibit cracks and localized pavement failures (potholes). Left unattended, the pavement surface will degenerate and allow air and moisture to intrude into the sub-base, compromising the structural integrity of the street. When the structural integrity of a street is gone, it has, in essence, "failed". The street can no longer carry traffic loads effectively. Most paved roads are designed for a 20 to 25 year life. Meaning, if no maintenance is performed during its service life, a brand new road would "fail" in 20 to 25 years, and hence, need costly reconstruction.

Figure 1 – PCI 90

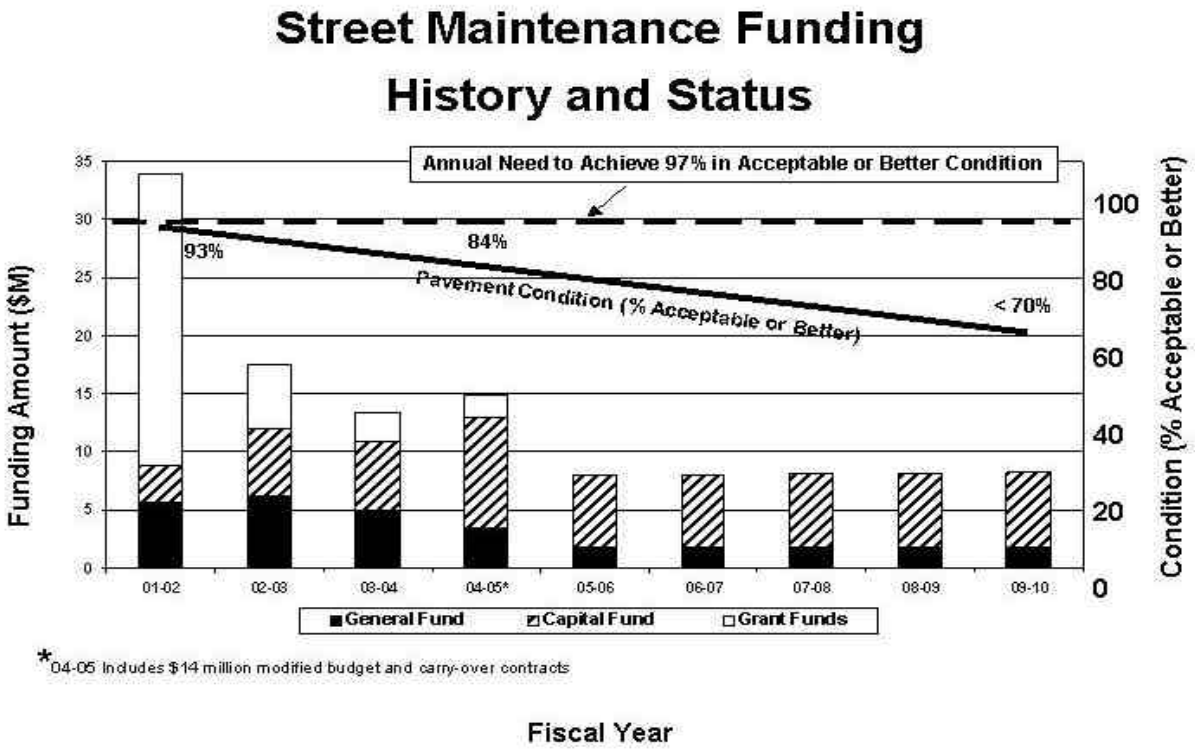
Figure 2 – PCI 45

Figure 3 – PCI 25

Investment Profile

Over the last few years, the Pavement Maintenance program has experienced a large

drop-off in federal, state, and local grant funding. Coupled with grant funding drop-off has been increasing pressure to reduce expenses in the City's General Fund. Altogether, these fiscal pressures have reduced the Pavement Maintenance program's funding from a high of $29.9 Million in 2001-02 to $9.3 Million in the current fiscal year, and down to $8.0 Million in fiscal year 2005-06. The 2005-06 General Fund contribution is down to $1.9 million in 2005-06, its lowest level in the last ten years. The chart below illustrates past, present, and future funding and its expected effects on the overall condition of the City's pavement infrastructure.



An optimal pavement maintenance program, utilizing regularly scheduled preventive maintenance processes, would achieve a goal of having 97% of all pavement assets rated with a PCI of 50 or above and would require approximately $30 million annually.

As a result of declining funding, preventive street sealing activities have not been able to keep up with annual needs. Since 2001-02, an average of 106 miles have been preventively sealed each year, short of the 250 miles needed to achieve the program's condition goal. Additionally, 202 miles of streets that were identified as needing resurfacing have been deferred and placed on a backlog list. Based on the network's current condition rating there are still another 90 of miles of streets currently in need of resurfacing that are yet to be identified.

Projections

Based on the projected funded levels, streets will have to wait an average of 46 years between sealing treatments. This will become problematic, as deterioration rates indicate that streets that have not been sealed within 15 years will require resurfacing when they are finally addressed.

Overall, the condition of the pavement infrastructure will decline to below 70% with a PCI rating of 50 or above by the end of 2009-10. This translates to having more than 30% of our entire pavement infrastructure in need of resurfacing. The total cost of resurfacing needs would be at least $209 million, up from $49 million in 2001-02.

Technology Advancements & Efficiencies

City staff remains very active in pavement industry organizations and continues to test new treatments and innovative management ideas. For example, this fiscal year, in order to stretch the dollars available and to address some of the streets in need of resurfacing, staff applied a special polymer modified asphalt product on 3 miles of qualifying streets and is monitoring its effectiveness to determine future use of the product. In addition, the cost benefits and environmental impacts of using rubberized products are being investigated and will also be tested this coming summer. Due to the increasingly limited resources available in 2005-06 and beyond, staff will be utilizing proven methods in different ways than previously used in order to maximize the number of miles that can be preventively sealed.

Roadway Markings & Striping

Asset Profile

San Jose's Roadway Markings and Striping assets consist of painted messages, curbs, directional arrows, lane striping, and crosswalk markings and other reflective devices on the roadway surface. Their primary purpose is to safely channel and direct the traveling public. A system wide inventory completed in 2004 determined that there are approximately 6 million square feet of painted devices and 500,000 reflective markers.

Roadway markings and striping should be clearly visible to the traveling public under all conditions. Federal requirements are now in place that dictate the level of visibility acceptable on all roadways. On average, approximately 60% of the City's roadway markings and striping assets will meet visibility guidelines during fiscal year 2004-2005. Figure 1 illustrates a painted message that meets visibility guidelines and Figure 2 shows a deficient device that would not be visible at night.

Figure 1 – Meets Visibility Guidelines

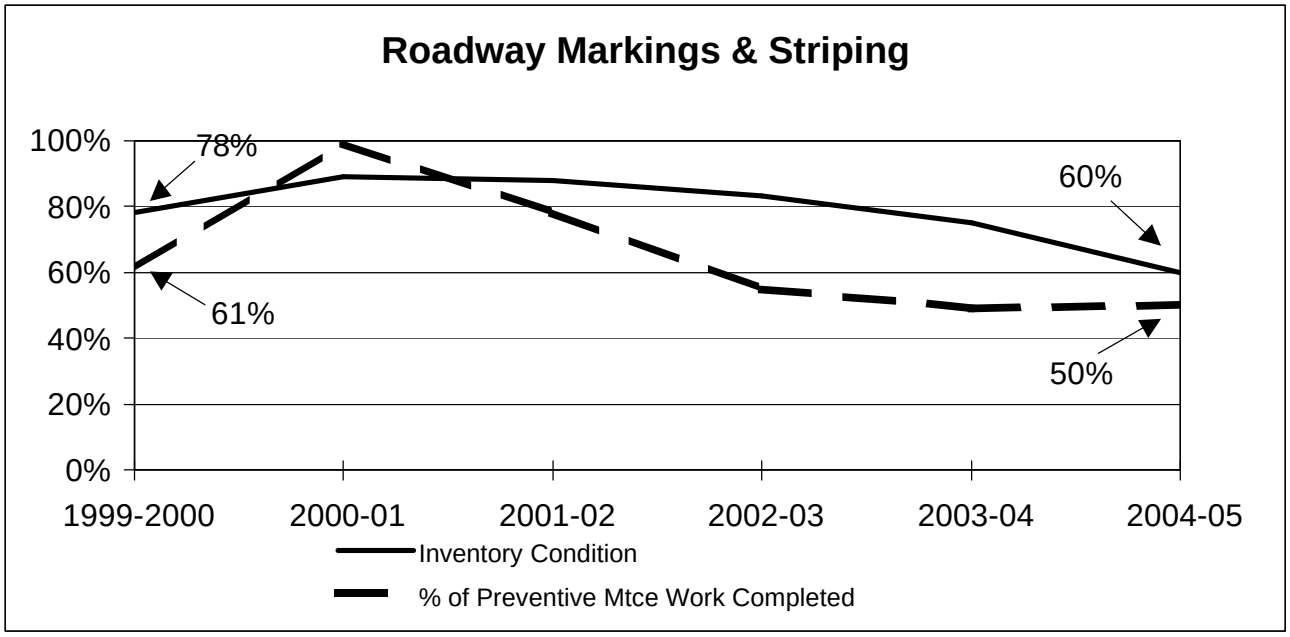
The City's roadway markings and striping have an average life expectancy from one to three years, depending on traffic volumes, before they become deficient and ineffective. Therefore, it is necessary that more than half of the City's markings and striping be repainted annually – a 2-year cycle – in order to sustain a system where 90% of devices meet visibility guidelines.


Figure 2 – Not Properly Visible

Investment Profile

San Jose is investing about $1.3 million annually on the Roadway Markings and Striping program. Funding is allocated to perform preventive and corrective maintenance activities, and to install new devices as deemed necessary by the City Traffic Engineer. Currently, less than one-third of the City's roadway markings and striping are painted annually – a 3-year cycle – primarily through the preventive maintenance program. Since fiscal year 2001-02, a combination of funding reductions and increases in the demand for corrective maintenance and new installations has directly impacted the amount of preventive maintenance performed. As a result, the overall condition of the City's markings and striping has declined. Figure 3 on the next page describes how the reductions in funding and preventive maintenance have impacted the condition of this critical asset.

To establish the prescribed preventive maintenance frequency and achieve the desired outcome of 90% of roadway markings and striping meeting visibility guidelines, it is recommended that the annual funding for the entire program be $1.6 million.



Projections

At current funding levels, the condition of the roadway markings and striping infrastructure over the next two to three years will continue to average 60% meeting visibility guidelines each year. While costs of deferred maintenance do not compound over time, the potential liability to the City and costs associated to society are significant.

Technology Advancements & Efficiencies

In 1998, the Roadway Markings Team entered a three-year service agreement with the City as part of a public/private competition program. During this period, the Roadway Markings Team:

- Increased overall production by 260%;
- Increased preventive maintenance quantities by 32%;
- Improved the condition of the City's markings and striping from 57% to 89%, and;
- Achieved unit costs 40-60% less than the private sector.

Today, the Roadway Markings Team continues to perform at the same high standards established during the service agreement. In addition, new industry technologies are constantly evaluated and employed. For example, new marking and striping materials are tested and evaluated each year in various areas of the City. The team performs quarterly reflectivity testing and tracks performance. As a result, the Roadway Markings Team has modified material specifications to require the application of more durable paints on City streets. These changes have increased the effective lifetime of each device and reduced the demand and cost of maintenance.

Sidewalks, Curbs & Gutters

Asset Profile

There are nearly 4,000 miles of sidewalks, curbs and gutters in the City of San Jose. Sidewalks enhance community livability by offering safe pedestrian travel ways adjacent to most streets within the City, while curbs and gutters provide delineation of the edge of street pavement and drain water from the streets into the storm sewer system. Along with the parkstrips and street trees, the responsibility to maintain these assets belongs to the abutting property owner.

Normal maintenance might include repair or replacement of damaged or displaced concrete (usually caused by street tree roots), abatement of weeds or debris, and the trimming of the trees and shrubs. Sidewalks and access to sidewalks are receiving increased attention in recent years with the development and implementation of Federal and State requirements to offer access of sidewalks to the disabled community.

Although there is no condition measure of the City's sidewalks, data is available for curbs and gutters. In 2001, City staff performed a random sample inspection of 2% of the city's curbs and gutters. From the data gathered, the following estimates were made:

- 48,000 lineal feet (approximately 9 miles) had severe damage
- 225,000 lineal feet (approximately 43 miles) had moderate damage
- 300,000 lineal feet (approximately 57 miles) had minor damage.

Figure 1 – Damaged Curb & Gutter

Considering the amount of curbs and gutters repaired or replaced since the survey, and the fact that damage to curbs and gutters continues throughout the City due to normal tree growth, it is estimated 250,000 lineal feet (approximately 47 miles), or just over 1% of curbs and gutters, are severely or moderately damaged and warrant repair or replacement. Figure 1 illustrates curbs and gutters in these conditions.

Effective and properly maintained sidewalks provide a clear and unobstructed choice of travel for pedestrians and individuals using wheelchairs. Other than displaced or damaged concrete, sidewalk obstructions typically consist of overgrown landscaping, untrimmed trees, or placement of foreign objects into the pubic right-of-way. The property owner typically removes these obstructions once they are notified. Displaced or broken concrete is repaired either by removing and replacing the displaced section

of concrete or by grinding down the displaced section to remove the vertical separation between concrete sections. Figures 2 and 3 are examples of sidewalks requiring remove and replace and grind repairs.

Figure 2 – Remove & Replace

Figure 3 – Grind

Grinds represent approximately 1/2 of sidewalk repairs performed and are a fraction of the expense of removing and replacing the sidewalk. The majority of grinds however, are temporary repairs and will require the sidewalk to be repaired again within five years.

Investment Profile

Along with street trees and parkstrips, San Jose property owners are responsible to maintain the sidewalk, curb and gutter adjacent to their own property. To assist property owners with the cost of sidewalk repairs, the City manages a sidewalk grant program, which reimburses property owners for the repair of sidewalks in front of owner-occupied homes. When adjacent curbs and gutters meet a severe condition and the affected area adversely impacts safe pedestrian traffic, their repair or replacement costs are also eligible for reimbursement. Up to $1,000 for mid-block properties and $2,000 for corner properties is granted.

Citizen requests for sidewalk and curb and gutter inspection generate approximately 4,000 locations for sidewalk repairs or clearance of obstructions and another 150 curb and gutter repairs and replacements annually. The FY 04-05 budget for the sidewalk grant program is $1.5 million and is proposed to be cut to $750,000 in FY 05-06 budget (and possibly eliminated in 2006-07). To stay within the FY 05-06 proposed budget, the grant cap is being proposed to be reduced to $500 per repair for mid-block properties and $1,000 for corner properties. At this time, no other funding is available to specifically perform curb and gutter repair or replacements citywide. In fiscal year 05-06, it is being proposed that $500,000 be allocated ongoing from the Storm Capital Improvement Program to address severe curb and gutter damage that causes significant storm water ponding or localized flooding.

While it is difficult to quantify the total need for sidewalk repairs, the level of citizen requests in the sidewalk grant program indicates that all qualified grant applicants could be fully reimbursed at an annual cost of $2 million. Although there is a total of $18 million of needed curb and gutter repairs and/or replacement currently in San Jose, a $1 million annual program would adequately address both citizen requests and the most severe cases of curb and gutter damage.

Technology Advancements & Efficiencies

In 1999 the Sidewalk Section created and implemented a Sidewalk Complaints database that provides for the timely tracking of all sidewalk and curb and gutter complaints and repairs. The section is in the process of implementing the use of handheld inspection devices that will allow for electronic processing of inspection information into the program's database, minimizing data entry error and reducing program costs.

Streetlights

Asset Profile

San Jose's Streetlights consist of standard roadway lighting, lighting for pedestrian walkways, and decorative lighting, such as the uplighting along the palm trees in Downtown. There are approximately 57,000 streetlights throughout the City. Three primary services are necessary to properly manage the City's streetlighting system: corrective maintenance for existing streetlight devices, streetlight pole and fixture replacement or refurbishing, and installation of new streetlights.

Corrective maintenance on existing streetlights includes repair of streetlight outages and damaged or knocked down streetlights. Each year, maintenance staff respond to approximately 10,000 streetlight outage repair requests from the public and other sources. The City has a goal of resolving 98% of streetlight outages in seven days from the date reported. Currently, approximately 60% of outages are resolved in seven days over the course of a fiscal year. In some cases, it can take up to 60 days to resolve a streetlight outage.

A program to replace or refurbish old and dilapidated streetlight poles and fixtures ensures the structural integrity and attractive aesthetics of the streetlight. There is currently no program to replace or refurbish existing streetlight poles. However, such a program existed between 1998 and 2002 where approximately 1,700 streetlight poles and fixtures were refurbished. Through this program, previously painted poles that were damaged, rusted, or otherwise deficient were removed from a location, stripped, repaired, and galvanized, then reinstalled in place of another dilapidated pole. Figures 1 and 2 illustrate the difference between old painted poles and newly refurbished poles.

Figure 1 – Dilapidated Streetlight Poles

Figure 2 – Refurbished Streetlight Poles

It is estimated that 36,000 painted poles exist throughout City neighborhoods that will eventually need to be repainted, replaced, or refurbished. It is estimated that approximately 5,000 of these poles are currently in this state. In addition, there are approximately 4,000 painted poles in the downtown that have received some amount of painting, but an ongoing program does not exist.

City staff also responds to requests from residents and Council for new street light improvements in older neighborhoods as recommended to meet the Street Lighting Standards for Private Developments. These requests have been managed within the Strong Neighborhood Initiative (SNI), Community Development Block Grants, (CDBG), and the Street Light Request programs funded through the Traffic Capital Improvement program. There is currently a backlog of approximately 60 minor requests for new streetlights (8 streetlights or less) and the Street Light Request program receives approximately 30 new requests annually.

Investment Profile

San Jose is investing about $1.7 million annually on the Streetlight maintenance program, not including electricity charges, which are approaching $4.0 million annually. Funding is allocated to perform corrective maintenance activities, exclusively. To achieve the desired outcome of 98% of streetlight outages repaired within seven days and to establish a pole painting maintenance program, it is recommended that the annual funding be increased to $2.1 million. To re-establish the pole-refurbishing program and effectively deal with the growing number of dilapidated poles and fixtures, an annual investment of at least $500,000 is required.

The City is currently investing $250,000 for minor streetlight installation requests. However, due to tight capital funds and the maintenance cost impacts of installing new streetlights, the program for addressing these requests is tenuous at best. There are currently no new plans to augment this funding. To eliminate the backlog of minor requests, a one-time investment of $2 million is required. To adequately deal with new requests received on an annual basis, ongoing funding or $1.1 million per year is necessary.

Projections

With current funding all streetlight outages would continue to get repaired annually without a backlog. However the repair times during peak work loads from October through February could take up to 60 days with the average being 40 days. Customer complaints would increase substantially. Over the course of a year, it is estimated that 60% of outages would be resolved in seven days.

An area of great concern is increasing costs for electricity. At approximately $4.0 million this fiscal year, the cost to energize the streetlight system has become a problem that can no longer be ignored. A proposal to reduce electricity costs by nearly $500,000 by shutting off approximately 5,500 streetlights is under consideration.

While costs of deferred maintenance do not compound over time for streetlights, poles and fixtures do have a limited life and will require replacement at some point. At current funding levels, the physical condition of the streetlight infrastructure will continue to gradually decline each year. It is estimated that poles have a 40-year life cycle and fixtures have a 20-year life cycle. Approximately 14,000 poles and luminaires will hit these targets within five years.

Without dedicated funding at adequate levels to address minor requests for new streetlights, it is projected that the backlog of requests will increase by 30 per year.

Technology Advancements & Efficiencies

In the fall of 2004 the Streetlight section implemented a new maintenance management system to replace the 22-year-old VAX system. The new system provides better access to management data for staff and more accurate, higher quality data for inventory control, customer service, and continuous improvement efforts.

Engineering and maintenance staff from several departments are continuing to evaluate new streetlighting technologies, such low-energy LED lights and solar powered lights. While these technologies appear to be several years away from being a cost-effective alternative to current standard products, they show promise for the future in lowering energy and maintenance costs.

Street Landscape

Asset Profile

Street landscapes contribute to community livability by helping to provide safe and aesthetically pleasing streetscapes for San Jose residents and visitors to enjoy. City crews maintain 210 acres of median and roadside landscapes throughout the City, mowing turf, trimming shrubs and groundcovers, removing weeds and litter, replacing dead and unhealthy plants, watering, repairing irrigation systems, and pruning trees.

In addition to these landscapes, there are also landscapes built and maintained by funding from Maintenance Assessment Districts (MAD's). Property owners within the MAD's pay special assessment taxes in order to have landscapes in their area that are designed and maintained at a much higher level than regularly maintained landscapes.

Figure 1 – Good Condition

Street landscapes are highly visible and help to make City streets attractive and pleasant to drive. Figure 1 is an example of how street landscapes can make a positive contribution to the look and feel of City streets.

Sustaining the condition and appearance of street landscapes requires frequent and ongoing maintenance. Currently, landscapes are watered regularly and serviced approximately every three weeks for general cleanup and weed abatement. Beyond these regular activities, street landscape maintenance also addresses less frequent, but more costly, needs such as replacing dead or unhealthy plant material and repairing and/or replacing deteriorated irrigation systems.

Most street landscapes are built by developers as part of their overall development plan, as approved by the City. Landscapes are also built by or in conjunction with City, state, and regional capital improvement projects. With the additional 8 acres expected to be added by the end of 2004-05, the landscape inventory will have increased by 37 % (59 acres) since 1998. Unfortunately, while the number of acres of street landscapes has risen, the resources to maintain them have fallen.

Identifying funding to maintain newly built street landscapes has long been a challenge. To help mitigate the effects of the ever-growing inventory, Council approved a policy in 1995 requiring new median landscapes to be ultra low (Type 1) maintenance designs, with the exception of the Downtown and Redevelopment areas.

While these Type 1 areas are less costly to maintain, they are not as aesthetically pleasing.

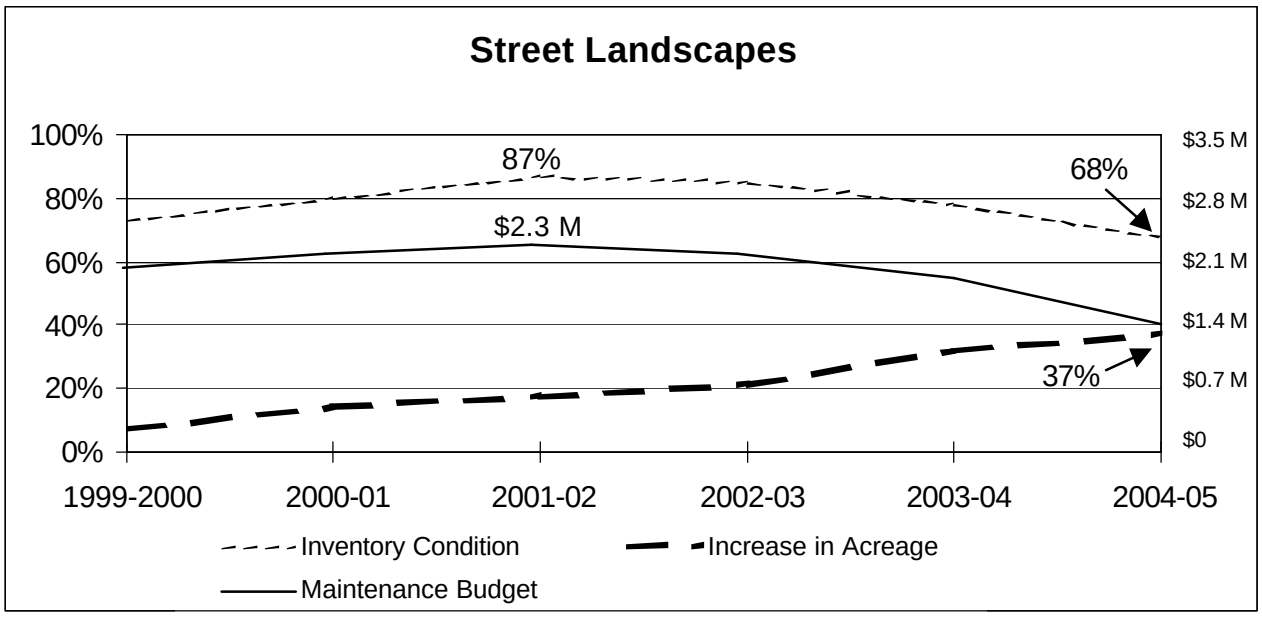
The landscape maintenance program's goal is to maintain 90% of street landscapes in good or better condition. The increasing inventory, coupled with the diminishing maintenance resources, has led to a reduction in the condition of street landscapes. By the end of fiscal year 2004-05, it is anticipated that 68% of the street landscapes will be maintained in good or better condition, down from 78% in fiscal year 2003-04 and 85% in fiscal year 2002-03. Figure 2 is an example of a street landscape in poor condition.

Figure 2 – Poor Condition

Investment Profile

In 2004-05, the City of San Jose is investing approximately $1.4 million annually on general street landscape maintenance, including over $400,000 for water utilities. This funding level provides for general landscape cleanup and maintenance, but for very limited plant replacement and irrigation system restoration work. 2004-05 inventory levels require an additional investment of $1.9 million annually to reach the 90% condition goal. This funding would provide $400k for plant replacement, $300k for contractual maintenance, and $1.2 million for restoration of staffing levels to account for the increased acreage over the last 3 years.

Figure 3 below describes how the reductions in funding and increased landscape acreage have impacted the overall condition of general street landscapes. The graph illustrates that the condition of street landscapes peaked at 87% in good or better condition in 2001-02 when the program was funded at $2.3 million. By the end of 2004-05, the inventory will have grown by 37% since 1998-99. This increase, along with the decrease in funding, will have driven the condition measure down to 68%.



Projections

As new landscapes are built each year with no allocated funding, there is a significant impact on service levels and the condition of all streetscapes citywide. Of particular concern are very large Light Rail Transit and Caltrans freeway landscape projects that are to be maintained by the City with no identified funding for maintenance. Overall, continued funding at the current level, along with the expected construction of new landscapes, will result in the percentage of landscaping in good condition falling to approximately 50% in the next three years. Weeds and litter will become prevalent, plant material will overgrow, irrigation systems will fail and plant loss will increase.

Technology Advancements & Efficiencies

In 1998, Council approved a Landscape Master Plan for Plant Replacement and Restoration of Street landscape. To improve overall staff efficiency and increase long-term landscape sustainability from 1998 to 2003, $1,750,000 was provided from the Traffic Capitol Fund to renovate old landscapes. Replacing antiquated irritation systems and installing lower maintenance landscape material thereby reduced staff time and maintenance costs in these areas. 13 acres of major median landscapes were renovated, contributing to the overall health and condition of the streetscape. This program was suspended in FY 2003-04, leaving approximately 27 acres of median and roadside landscapes still in need of major renovation work.

In 1998, the landscape maintenance program was reorganized to provide a more focused maintenance approach. The reorganized program focuses more maintenance resources on major street median landscapes to protect the City's investment and fewer resources on roadside landscapes. The reorganized program also emphasizes scheduled maintenance in specific work zones, which has improved crew efficiencies.

The landscape maintenance program also continues to coordinate with the Santa Clara County Correctional program to maximize the use of the Alternate Work Program, which utilizes the free labor of program participants for the cleanup of larger roadside landscapes.

Street Tree Maintenance and Care

Asset Profile

The urban forest of San José, which consists of over 300,000 street trees in the public right of way, beautifies neighborhoods and enhances community livability throughout the City. By the end of fiscal year 2004-05, 46% of the urban forest will be in optimal condition.

By Code, the property owners are responsible for the maintenance of their street trees. However, the City has traditionally assisted with a variety of services to supplement this maintenance by the property owners, such as managing the tree permit program, educating the public tree about trees and maintenance techniques, performing structural and clearance tree trimming, and addressing tree emergencies.

Studies by the Urban Forest Research Center of the U. S. Forest Service have determined that a 4-5 year street tree pruning cycle is the most cost effective and efficient method of trimming street trees. On that schedule, structural concerns with the tree are caught early while they are small, meaning that they are inexpensive to solve. Figure 1 is an example of a healthy, well-maintained urban forest.

Figure1 – Enhancing Community Livability

Investment Profile

Tree maintenance is a specialized science the cost of pruning can be significant. To prune large trees can often cost a homeowner from $500 to $1,000 per tree. Because of the great economies of scale, the City is able to get competitive bids for correctly pruning the same trees for under $100 per tree. Experienced City arborist inspectors oversee the contractual pruning, ensuring that the pruning meets professional standards and promotes a healthy tree.

An optimal program would trim approximately 68,000 trees annually at an annual cost of approximately $3 million. In fiscal year 2002-03, San José invested over $700,000 in structural tree trimming to assist property owners with the maintenance of their street trees. This level of funding provided a ten-year tree trimming cycle; although not optimum, it provided a very beneficial return on the healthy urban forest. Since that time the funding has progressively decreased, to the point where in fiscal year 2005-06,

structural trimming is proposed for elimination. During the next three to five years, this would result in the loss of mature trees from failure, increased property damage and a general decline in the urban forest. The condition of the urban forest is expected to decline to 40% in optimum health within the next five years.

Since one of the major reasons to prune trees is to address potential safety concerns, reductions in tree trimming activities will result in more tree emergencies. Tree emergencies are costly to both the City and to its residents, as they often result in property damage and require additional staff time to clean up. Figure 2 is an example of the damage that can occur during a tree emergency.

Figure 2 – Tree Emergencies Can Be Costly

Technology Advancements and Efficiencies

The Arborist's office continues to work with the Department of Public Works, developers, property owners, Our City Forest and tree nurseries to plant the proper tree in the spaces provided. These efforts reduce future maintenance costs and the number of tree failures. In addition, an inventory of the street trees is taken as the trees are pruned. Currently the inventory is approximately 12% complete and accessible on-line. Further advancements could be made if/when structural pruning resumes.

Traffic Control and Streetname Signs

Asset Profile

San Jose's Roadway Sign inventory consists of traffic control type signs and streetname signs. Some examples of these devices are shown in Figure 1. The primary purpose of the City's sign assets is to regulate, warn, and guide the traveling public. A traffic control sign inventory completed in 2004 determined that there are approximately 60,000 traffic control signs. It is estimated that there are 25,000 streetname signs.

Figure 1

All signs should be clearly visible to the traveling public and should have good reflectivity at nighttime. Federal requirements are now in place that dictate the level of acceptable visibility. Since 1997, the City has invested well over $1 million in total to proactively replace faded or deficient traffic control signs. As a result, approximately 84% of the City's traffic control signs currently meet visibility guidelines. 45% of streetname signs currently meet visibility guidelines.

The City's traffic control signs have an average life expectancy of 8 years and streetname signs last about 15 years before they become deficient and ineffective. Therefore, it is necessary that approximately 7,500 of the City's traffic control signs and 1,700 of the streetname signs be replaced annually in order to sustain a system where at least 90% of all roadway signs meet visibility guidelines.

Investment Profile

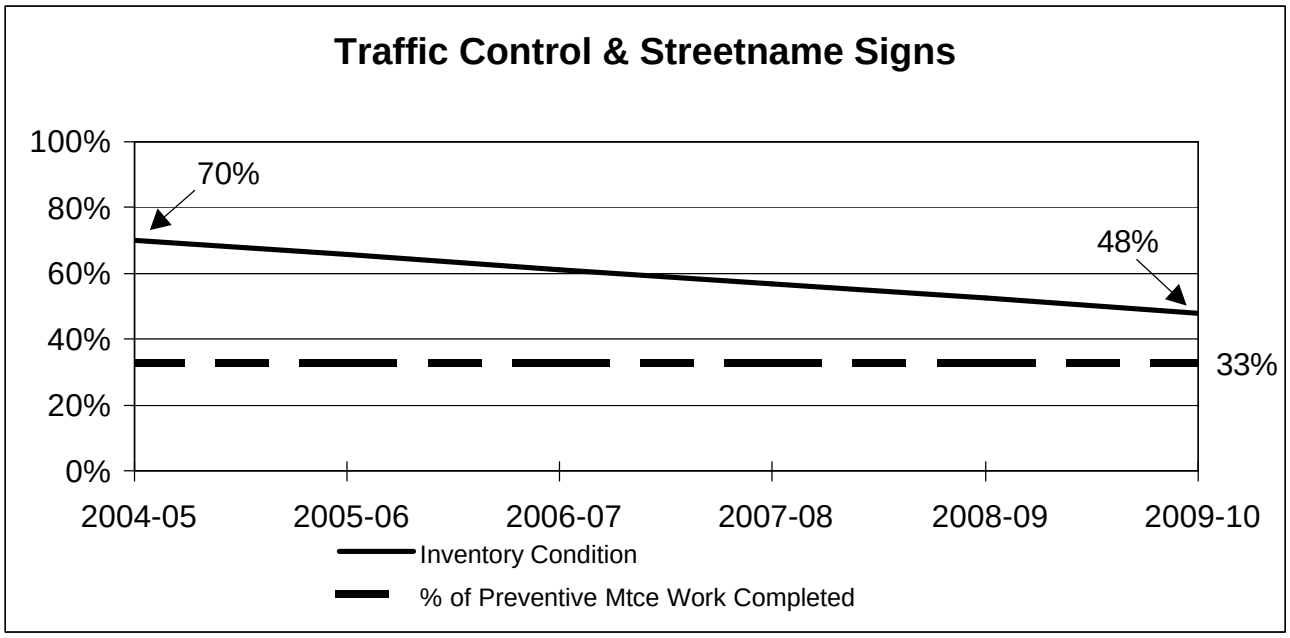
The City is currently investing about $1.1 million on the Sign Maintenance program for preventive and corrective maintenance activities, and to install new signs as deemed necessary by the City Traffic Engineer. Since fiscal year 2002-03, a combination of funding reductions and increases in the demand for new installations has directly impacted the amount of preventive maintenance performed on traffic control signs. Currently, about 3,000 of the City's traffic control sings are preventively maintained, or proactively replaced, annually. This is well short of the level needed to maintain acceptable visibility levels. Funding is not available to perform any preventive maintenance on streetname signs.

To achieve the desired outcome of 90% of traffic control and streetname signs meeting visibility guidelines, the preventive maintenance frequency for traffic control signs would need to increase from the current 20-year cycle to an eight-year cycle, and a preventive maintenance program would need to be established for streetname signs

on a 15 year cycle. It is recommended that the annual funding for the entire program be $1.5 million to accomplish these objectives.

Projections

Recent reductions in traffic sign preventive maintenance have not significantly affected the overall condition of the traffic sign infrastructure. This is due to the fairly long life cycle of a sign. However, if funding levels remain constant or continue to decline as projected, a more severe drop in the condition of the sign infrastructure will occur. It is estimated that in 5 years, approximately 60% of traffic control signs and less than 20% of streetname signs (48% combined) will meet visibility guidelines. The chart below illustrates the effect of inadequate preventive maintenance activities on the overall condition measure.



While the cost of deferred maintenance does not compound over time for signs, the cost of replacing signs on a proactive schedule is much more cost effective than replacing faded or deficient signs as they are reported. Signs are also critical to the safety of the traveling public and the potential liability to the City due to deficient signage is significant.

Technology Advancements & Efficiencies

In recent years, the efficiency in sign maintenance operations has improved dramatically through better data and information management, including the development of an inventory and work management system. In addition, new sign materials and industry innovations are regularly evaluated and employed. Since 1997,

the Sign Maintenance staff has modified sign specifications to require the use of more durable sign materials. These changes have increased the effective lifetime of each sign and reduced the demand and cost of maintenance.

Traffic Signals and Intelligent Transportation Systems

Asset Profile

The purpose of San Jose's traffic signal and Intelligent Transportation Systems (ITS) is to safely and efficiently move people and goods by providing viable choices in travel modes, convenient commutes to work, and efficient access to major activity centers. The traffic signal and ITS systems currently consists of the following assets:

- 864 Traffic Signals and associated controller equipment
- 73 closed circuit traffic monitoring cameras
- 17 changeable message signs
- 55 miles of fiber optic communication cables
- 120 miles of copper communication cables
- 33 speed radar signs
- 13 lighted crosswalks
- A state of the art traffic control center

All of these devices are part of an integrated system that requires a complex set of services to manage, operate, adjust and maintain. It is the preventive maintenance and operations services, such as the proactive replacement of old, ineffective devices or the proactive retiming of a traffic signal that provides the most cost-effective way to ensure that the systems are providing the greatest benefit to the traveling public. It is these services that are currently under funded and having the greatest impact on the systems.

While the life cycle of the traffic signal and ITS systems hardware, cabling, and underground facilities is many decades, the critical active equipment designed to control and operate the systems has a much shorter life span and requires more frequent replacement. The table below describes the useful life cycle, average age, and total replacement costs for these critical assets that exist in the City today.

Asset	Useful Life Cycle (in years)	Average Age (in years)	Total Replacement Cost
Traffic Signal Controllers & Electronic Equipment	20	15	$5,000,000
Closed Circuit Cameras	10	8	$200,000
Changeable Message Signs	10	12	$600,000
Traffic Control Center	10	15	$10,000,000
Speed Radar Signs	10	2	$300,000
Lighted Crosswalks	10	2	$130,000

In general, the most critical and costly traffic signal and ITS systems assets have passed or are quickly approaching the end of their useful life cycle. The full affects of this aging infrastructure have been minimal thus far, but will require attention in the coming years as they fall into disrepair, completely fail, or become obsolete.

In addition to considering the need to replace aging assets, it is essential that they are well maintained, properly inspected, and adjusted during their lifetime to fully utilize the capabilities of the systems. The following table describes the activities needed to achieve the most efficient and safest system.

Activity	Prescribed Frequency	Current Frequency
Field inspection and adjustment of traffic signal controller equipment	Semi-Annually	No schedule established; occurs sporadically
Testing and repair of traffic signal safety and conflict monitoring equipment	Annually	Annually
Field inspection and maintenance of traffic signal hardware and wiring systems	Bi-Annually	None
Review and retiming of traffic signal timing arterial synchronization plans	Bi-Annually	Approximately every 10 years (90 signals annually)
Field inspection and maintenance of ITS devices and communications devices	Bi-Annually	None
Field inspection and maintenance of uplit crosswalks, speed radar signs, and other traffic safety type devices	Semi-Annually	None

Based on the current frequency of activity describe above, it is apparent that the proper level of preventive maintenance and operational review activities are not being performed. This is having an adverse affecting the operational condition of our traffic signal and ITS assets. The following summarizes our annual levels of preventive maintenance and operational review activities:

- Approximately 42% of traffic signal preventive maintenance activities are being completed
- Approximately 10% of traffic signal timing plans are being proactively reviewed and retimed
- 0% of ITS and communications device preventive maintenance activities are being completed
- Approximately 15% of traffic impacts due to incidents and events are managed

Investment Profile

San Jose is currently investing about $3.8 million annually ($2.1 million for traffic signal maintenance and $1.7 million for operations) to maintain and operate the traffic signal and ITS systems. It is estimated that approximately $2.4 million is needed annually to meet the prescribed traffic signal and ITS system preventive maintenance schedules and another $2.5 million to properly review and retime the traffic signals and arterial corridors. This represents an annual need of $4.9 million and an annual shortfall of $1.1 million for the critical preventive maintenance and operations services.

Regarding the replacement of aging traffic signal and ITS systems devices, proposals are currently being considered to increase the level of capital funding for major systems rehabilitation. It is proposed that approximately $1.4 million be allocated indefinitely to perform portions of this work and to invest in other improvements, such as the conversion of traffic signal green and yellow incandescent lamps to LED modules. Unfortunately, a significant shortfall for the proper replacement or rehabilitation of the systems still exists. It is estimated that approximately $16 million is needed to address backlogged and expected needs.

Projections

Further reductions are proposed for fiscal year 2005-06, dropping funding to around $3.3 million (signal maintenance will drop to $1.75 million; signal operations will drop to $1.58 million) and directly impacting traffic signal preventive maintenance and traffic signal retiming to a greater extent. This would further reduce the funding shortfall to $XX million per year, and when compounded with a growing inventory, would lead to a drastic decline the operational efficiency and overall condition of the traffic signal and ITS systems. While costs of deferred maintenance do not grow over time, the costs of traffic congestion, travel delays, additional fuel consumption, and liability for ineffective traffic control devices are tremendous.

Technology Advancements & Efficiencies

In 1988, the City began the employment of innovative technology solutions to effectively manage and operate its transportation network. The sixteen million dollar Traffic Signal Management Program implemented a state of the art traffic control center to reduce travel delay, and improve maintenance and repair response times. The Program resulted in annual fuel savings of 3.2 million gallons per year, a 16% reduction in stops and delays, and reduction of over 800 tons of air pollutants. Over the last decade, the City has employed advanced technology to improve traffic conditions around the Mineta San Jose International Airport, manage downtown event traffic, as well as support regional traffic management operations. These investments have resulted in average travel time saving of 10 to 15%, increased safety, and improved workflow productivity.

Between 1997 and 1999, all red traffic signals indicators were converted from incandescent lamps to LED type lamps to reduce energy and maintenance cost. In addition, approximately 200 traffic signals have been fully converted to red, yellow and green LED's. Over the next two years, the remaining traffic signals are proposed to be fully converted to LED indicators saving the city over $700K annually in energy cost.

Other technology advances, such as video assisted vehicle detection, are being implemented in San Jose under certain circumstances. While many of these advancements are in the early stages of development, they hold great promise for the future in terms of greater functionality at lesser operations and maintenance costs.